

REMARKS

Claim 1-4, 6-9, 12-15, 21-24 and 27-32 are pending. Claims 5, 10-11, 16-20, and 25-26 have been canceled and claims 31-32 have been added by the present amendment. Claims 1, 6, and 21 are in independent form.

In the action mailed January 6, 2006, claims 2, 7, and 17-20 were objected to on various grounds. The claims have either been amended to address the Examiner's concerns or canceled, rendering the objection moot.

Claims 2, 5, 7, 10-11, 16-20, 22, and 25-26 were rejected under 35 U.S.C. § 112, second paragraph as indefinite on various grounds. The claims have either been amended to address the Examiner's concerns or canceled, rendering the rejections moot.

Claim 1

Claim 1 was rejected under 35 U.S.C. § 102(e) as anticipated by U.S. Patent No. 6,523,060 to Kao (hereinafter "Kao").

As amended, claim 1 relates to a method of processing data packets. The method includes receiving an enqueue command specifying a new buffer and a queue descriptor, the queue descriptor specifying one of a most recently used queue and a least recently used queue, with the most recently used queue descriptors each being stored in a cache and comprising a head pointer pointing to a first buffer in a queue of buffers and a

tail pointer pointing to a last buffer in the queue of buffers and with the first buffer having a buffer pointer pointing to a next buffer in the queue, in response to the queue descriptor specifying a most recently used queue, setting a buffer pointer associated with the last buffer in the specified queue to point to the new buffer and setting the tail pointer in the specified queue to point to the new buffer, and in response to the queue descriptor specifying a least recently used queue, replacing a most recently used queue descriptor in the cache with the queue descriptor specifying the least recently used queue.

Kao neither describes nor suggests elements and/or limitations of the method recited in claim 1. For example, Kao neither describes nor suggests that most recently used queue descriptors are stored in a cache and that, in response to a queue descriptor specified in an enqueue command specifying a least recently used queue, a most recently used queue descriptor is replaced in the cache with the queue descriptor specifying the least recently used queue.

Accordingly, claim 1 is not anticipated by Kao and applicant requests that the anticipation rejection be withdrawn.

In addressing other claims, the Office Action contends that col. 7, line 45-59 of U.S. Patent No. 6,975,637 to Lenell (hereinafter "Lenell") somehow relates to the replacement of queue descriptors in a cache.

Applicant respectfully disagrees. In describing the operation of a buffer manager 50 that grants new *buffers* to ports before a data packet is received and collects free unused buffers from ports that have transmitted a packet, Lenell indicates that a LIFO buffer 54 "can store locations of allocated buffers until they are needed by the Buffer Grant Bus controller 55." See, e.g., *Lenell*, col. 7, line 53-56 and col. 8, line 44-46.

To begin with, Applicant submits that the storage of buffer locations before the buffers are granted provides little insight to one of ordinary skill in the art regarding how queue descriptors are to be handled. Further, Applicant respectfully submits that such a LIFO storage of buffer locations does nothing to suggest the replacement of queue descriptors in a cache to one of ordinary skill. In particular, buffer addresses in a LIFO storage are understood to be retrieved on the basis of "last in, first out" policy. Applicant is at a loss to understand how such a retrieval relates to the replacement of queue descriptors.

Accordingly, claim 1 is understood to be allowable over Kao and Lenell, alone or in combination. Applicant thus requests that the rejections of claim 1 and the claims dependent therefrom be withdrawn.

Claim 6

Claim 6 was rejected under 35 U.S.C. § 102(e) as anticipated by Kao.

As amended, claim 6 relates to an apparatus for processing data packets. The apparatus includes at least one memory, a processor coupled to the at least one memory, and a computer-readable medium storing instructions that, when applied to the processor, cause the processor to generate an enqueue command to the at least one memory specifying a new buffer and one or more of a most recently used queue descriptor and a least recently used queue descriptor. The at least one memory comprises a collection of queues of one or more buffers, each queue having a first buffer with a buffer pointer pointing to a next buffer in the queue, a collection of most recently used queue descriptors, each of which comprises a head pointer pointing to the first buffer in a corresponding queue and a tail pointer pointing to a last buffer in the corresponding queue, and a collection of least recently used queue descriptors, each of which comprises a pointer pointing to a corresponding queue. In response to the enqueue command specifying a most recently used queue descriptor, a buffer pointer associated with the last buffer of the specified queue is set to point to the new buffer, and the tail pointer of the specified queue is set to point to the new buffer. In response to the enqueue command specifying a least

recently used queue descriptor, a most recently used queue descriptor is replaced in the collection of most recently used queue descriptors with the specified least recently used queue descriptor.

Kao neither describes nor suggests elements and/or limitations of the apparatus recited in claim 6. For example, Kao neither describes nor suggests at least one memory that comprises a collection of most recently used queue descriptors and a collection of least recently used queue descriptors, as recited in claim 6.

Accordingly, claim 6 is not anticipated by Kao and applicant requests that the rejections of claim 6 and the claims dependent therefrom be withdrawn.

Claim 21

Claim 21 was rejected under 35 U.S.C. § 102(e) as anticipated by Kao.

As amended, claim 21 relates to a system that includes a source of data packets to be grouped into data buffers, a destination for the data packets, and an apparatus coupled to the source of the data packets and to the destination of the data packets. The apparatus comprises at least one memory, a processor coupled to the at least one memory, and a computer-readable medium storing instructions that, when applied to the processor, cause the processor to generate an enqueue command to

the at least one memory specifying a new buffer and one or more of a least recently used queue descriptor and a most recently used queue descriptor. The at least one memory comprises a collection of queues of one or more buffers, each queue having a first buffer with a buffer pointer pointing to a next buffer in the queue, a collection of most recently used queue descriptors, each of which comprises a head pointer pointing to the first buffer in a corresponding queue and a tail pointer pointing to a last buffer in the corresponding queue, and a collection of least recently used queue descriptors, each of which has a pointer pointing to a corresponding queue. In response to the enqueue command specifying a most recently used queue descriptor, a buffer pointer associated with the last buffer of the specified queue is set to point to the new buffer, and the tail pointer of the specified queue is set to point to the new buffer. In response to the enqueue command specifying a least recently used queue descriptor, a most recently used queue descriptor is replaced in the collection of most recently used queue descriptors with the specified least recently used queue descriptor.

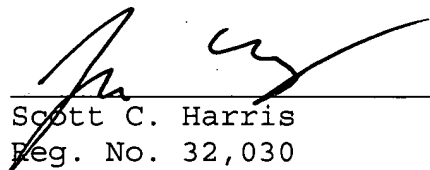
Kao neither describes nor suggests elements and/or limitations of the system recited in claim 21. For example, Kao neither describes nor suggests at least one memory that comprises a collection of most recently used queue descriptors and a collection of least recently used queue descriptors, as recited in claim 21.

Accordingly, claim 21 is not anticipated by Kao and applicant requests that the rejections of claim 21 and the claims dependent therefrom be withdrawn.

Applicant asks that all claims be allowed. Enclosed is a check for the Petition for Extension of Time fee. Please apply any other charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

Date: May 8, 2006



Scott C. Harris
Reg. No. 32,030

Fish & Richardson P.C.
PTO Customer No. 20985
12390 El Camino Real
San Diego, California 92130
(858) 678-5070 telephone
(858) 678-5099 facsimile

BY
JOHN F. CONROY
REG. NO. 45,485

SCH/JFC/jhg
10614503.doc